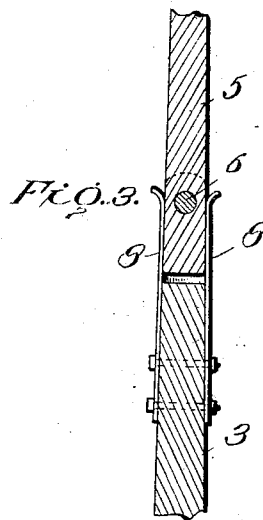
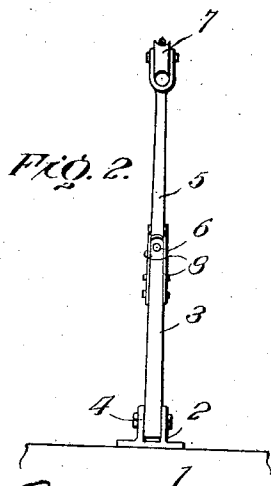
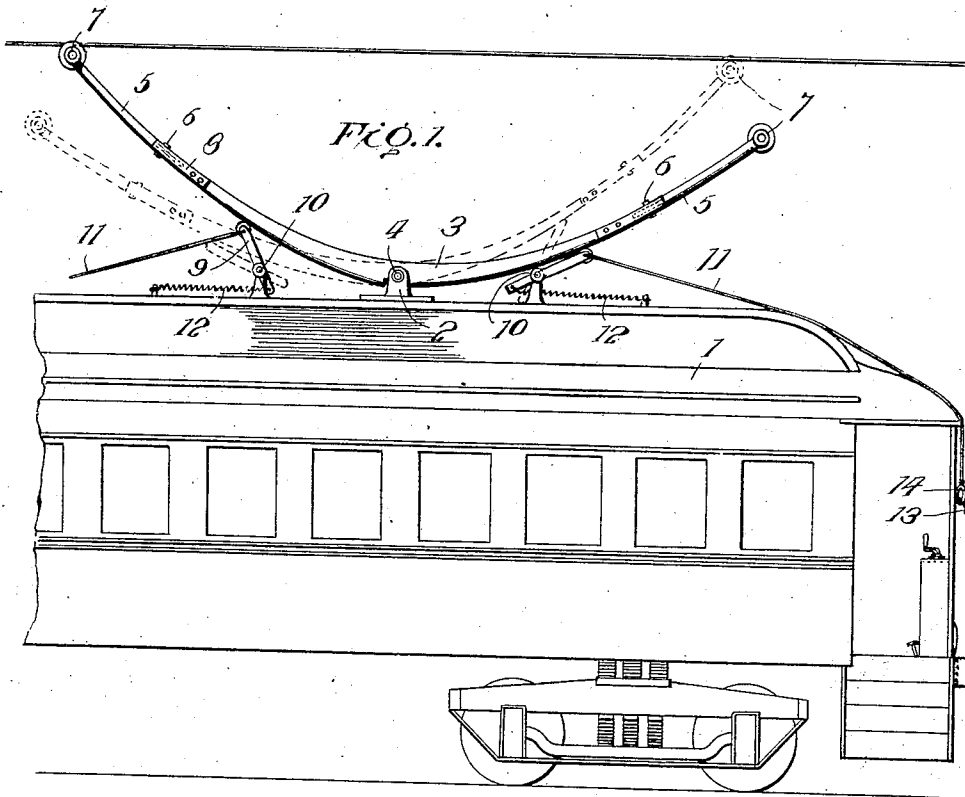


No. 854,759.

PATENTED MAY 28, 1907.

L. RADCLIFF.
TROLLEY POLE.

APPLICATION FILED JUNE 29, 1906.



Witnesses
James H. Hudson

Inventor
L. Radcliff
By *W. B. Racy*, Attorneys

UNITED STATES PATENT OFFICE.

LEE RADCLIFF, OF DANVERS, ILLINOIS, ASSIGNOR OF ONE-HALF TO ADDIE HAY, OF BLOOMINGTON, ILLINOIS.

TROLLEY-POLE.

No. 854,759.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed June 29, 1906. Serial No. 324,074.

To all whom it may concern:

Be it known that I, LEE RADCLIFF, a citizen of the United States, residing at Danvers, in the county of McLean and State of Illinois, have invented certain new and useful Improvements in Trolley-Poles, of which the following is a specification.

This invention comprises primarily a double trolley pole for trolley cars designed particularly to do away with the customary construction of trolley pole base necessary to admit of turning of the pole and reversal of the direction of movement of the car to which it is attached.

A trolley pole embodying this invention, has its opposite ends provided with trolley wheels and is so constructed that the trolley wheel at either of such ends may be caused to engage the feed or trolley wire merely by movement of the pole in a vertical plane, and obviating the necessity for turning the pole, as above premised permitting of greater celerity in effecting engagement of the trolley wheel or wheels of the pole with the feed wire preparatory to reversing the car.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a side view showing the upper portion of a trolley car having the invention applied thereto. Fig. 2 is a front elevation. Fig. 3 is a detail sectional view bringing out clearly the means for connecting the upper section at each end of the pole, with the body thereof.

Specifically describing the invention, the numeral 1 designates the car body and the numeral 2 indicates a post or short standard projecting upwardly from the top of the car centrally thereof and having the pole 3 pivoted between its ends thereto, as shown at 4. The pole 3 is of peculiar form, being curved so that its ends project upwardly from the top of the car, each end having a movable upper section 5 pivoted to the body of the pole as shown at 6, so as to move laterally or about a horizontal axis to permit the trolley wheels 7, one of which is attached to the upper extremity of each section 5, to readily remain in engagement with the feed or trolley wire as the car passes around curves. In

other words, the mounting of the sections is such that the pole can readily swing laterally to compensate for inequalities in the level of the track which would cause the car to tilt from side to side. Normally, however, the sections 5 of the upper ends of the pole are held in longitudinal alinement with the body of the pole by means of springs 8, a pair of which is attached to the pole 3 at opposite sides of its pivot 6 to engage the lower end of each section 5 and hold it in its normal position above mentioned. The springs 8 are preferably flat springs free at the upper ends and secured to the pole 3 at the lower ends.

The means governing the position of the pole 3, or the operating means comprising the invention, consists mainly of spring actuated levers 9, the lower ends of which are pivoted to the top of the car as shown at 10 and the upper ends of which are connected with operating ropes or cords 11. The pivots 10 of the levers 9, though located near the lower ends of said levers, are arranged intermediate the extremities of the latter, and springs 12 or similar elastic connections are attached at one end to the top of the car and at the opposite ends to the lower extremity of a lever 9 so as to normally hold the upper end of such lever in positive engagement with the under side of the adjacent end portion of the pole 3. In other words, the coöperation of the springs 12 with the levers 9 is such that when said levers 9 are not held down by the cords or connections 11, they tend to force the ends of the pole 3 upwardly to cause the trolley wheels carried by such ends to engage with the feed or trolley wire. Normally, the trolley wheel at one end of the trolley pole 3, engages the feed or trolley wire and is held in such engagement by means of the adjacent spring actuated lever 9 which bears against this portion of the pole and which is free to move upwardly as the rope or cord 11 connected with said lever, is free at its lower end. The opposite lever 9, however, is held down by connection of the lower end of this cord or rope 11 with a suitable member 13 at one end of the car. Thus while one lever 9 is actuated by its spring to hold up one end of the pole 1, the other lever is held down against the tension of its spring so that one end of the pole 3 will be held up higher than the other end, the uppermost of the ends of the pole, having its trolley wheel in engagement

with the trolley wire. Whenever it is desired to reverse the direction of movement of the car, all that is necessary on the part of the trainman is to pull down upon the rope or
 5 cord 11 of the uppermost lever 9, connect the lower end of this rope with the adjacent member 13 on the car 1, and reverse the opposite of the levers 9 by disengaging the lower
 10 end of its operating cord or rope 11. The last mentioned lever will thus force the opposite end of the pole 3 upwardly so as to engage its trolley wheel with the wire. Suitable handles 14 may be attached to the lower extremities of the ropes or cords 11 and these handles
 15 may comprise rings to facilitate connection of the lower ends of the cords or ropes 11 with the members 13. It is of course not necessary to turn the trolley pole about a vertical axis, as is necessary in using most of those
 20 now in use, in order to reverse the movement of the car. In fact one can readily adjust the trolley pole without getting off of the car and this is of considerable advantage under certain conditions of service. Of course
 25 when both of the levers 9 are held downwardly by connection of the handles 14 with the members 13, neither end of the trolley pole will be sufficiently high to have its trolley wheel in engagement with the feed or trolley wire. In other words, in order to throw
 30 the trolley pole out of operative position, it is simply necessary to hold the two levers 9 down.

The upper ends of the levers 9 are preferably provided with anti-friction rollers adapted to directly engage the pole 3. The
 35 operation of the levers 9 may be accomplished with greater ease so far as the force

expended is concerned, by the use of the rollers. 40

Having thus described the invention, what is claimed as new is:

1. The combination of a car, a standard projecting from the car, a trolley pole pivotally mounted at an intermediate point upon
 45 the standard and having a rocking movement whereby either end thereof can be thrown into engagement with the line wire, a spring actuated lever mounted upon the car at each side of the standard, each of the levers bearing loosely against the corresponding
 50 end of the trolley pole and tending to throw the same into engagement with the line wire, and means for holding either one of the levers in an inoperative position. 55

2. The combination of a car, a standard carried by the car, a trolley pole pivotally mounted at an intermediate point upon the standard and having a rocking movement whereby either end thereof can be thrown
 60 into engagement with a line wire, an operating lever located upon each side of the standard, the upper end of each operating lever loosely engaging the corresponding arm of the trolley pole, a spring connected to the
 65 lower end of each of the operating levers and normally acting to throw the corresponding end of the trolley pole into engagement with the line wire, and means for holding either one of the levers in an inoperative position. 70

In testimony whereof I affix my signature in presence of two witnesses.

LEE RADCLIFF. [L. s.]

Witnesses:

HARVEY HART,
 MAYME McDONALD